



<120> Method for identifying compounds that inhibit or reduce a chronic inflammatory airway disease in which a macrophage is in a hyperactivated status due to down-regulated p21-activated kinase 2 (PAK2) kinase

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<210> 4
 <211> 524
 <212> PRT
 <213> Homo sapiens

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Arg Met Ser Ser Thr Ile Phe Ser Thr Gly Gly Lys Asp Pro Leu Ser
          20                      25                      30

Ala Asn His Ser Leu Lys Pro Leu Pro Ser Val Pro Glu Glu Lys Lys
    35                      40                      45

Pro Arg His Lys Ile Ile Ser Ile Phe Ser Gly Thr Glu Lys Gly Ser
    50                      55                      60

Lys Lys Lys Glu Lys Glu Arg Pro Glu Ile Ser Pro Pro Ser Asp Phe
    65                      70                      75                      80

Glu His Thr Ile His Val Gly Phe Asp Ala Val Thr Gly Glu Phe Thr
          85                      90                      95

Gly Met Pro Glu Gln Trp Ala Arg Leu Leu Gln Thr Ser Asn Ile Thr
    100                      105                      110

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Lys	Leu	Glu	Gln	Lys	Lys	Asn	Pro	Gln	Ala	Val	Leu	Asp	Val	Leu	Lys	
	115						120					125				
Phe	Tyr	Asp	Ser	Asn	Thr	Val	Lys	Gln	Lys	Tyr	Leu	Ser	Phe	Thr	Pro	
	130					135					140					
Pro	Glu	Lys	Asp	Gly	Leu	Pro	Ser	Gly	Thr	Pro	Ala	Leu	Asn	Ala	Lys	
	145				150					155					160	
Gly	Thr	Glu	Ala	Pro	Ala	Val	Val	Thr	Glu	Glu	Glu	Asp	Asp	Asp	Glu	
				165					170						175	
Glu	Thr	Ala	Pro	Pro	Val	Ile	Ala	Pro	Arg	Pro	Asp	His	Thr	Lys	Ser	
			180					185					190			
Ile	Tyr	Thr	Arg	Ser	Val	Ile	Asp	Pro	Val	Pro	Ala	Pro	Val	Gly	Asp	
	195						200					205				
Ser	His	Val	Asp	Gly	Ala	Ala	Lys	Ser	Leu	Asp	Lys	Gln	Lys	Lys	Lys	
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Pro	Lys	Met	Thr	Asp	Glu	Glu	Ile	Met	Glu	Lys	Leu	Arg	Thr	Ile	Val	
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Ser	Ile	Gly	Asp	Pro	Lys	Lys	Lys	Tyr	Thr	Arg	Tyr	Glu	Lys	Ile	Gly	
				245					250					255		
Gln	Gly	Ala	Ser	Gly	Thr	Val	Phe	Thr	Ala	Thr	Asp	Val	Ala	Leu	Gly	
			260					265					270			
Gln	Glu	Val	Ala	Ile	Lys	Gln	Ile	Asn	Leu	Gln	Lys	Gln	Pro	Lys	Lys	
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Asn	Ile	Val	Asn	Phe	Leu	Asp	Ser	Tyr	Leu	Val	Gly	Asp	Glu	Leu	Phe	
	305				310					315					320	
Val	Val	Met	Glu	Tyr	Leu	Ala	Gly	Gly	Ser	Leu	Thr	Asp	Val	Val	Thr	
				325					330					335		
Glu	Thr	Cys	Met	Asp	Glu	Ala	Gln	Ile	Ala	Ala	Val	Cys	Arg	Glu	Cys	
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Leu	Gln	Ala	Leu	Glu	Phe	Leu	His	Ala	Asn	Gln	Val	Ile	His	Arg	Asp	
	355						360					365				
Ile	Lys	Ser	Asp	Asn	Val	Leu	Leu	Gly	Met	Glu	Gly	Ser	Val	Lys	Leu	
	370					375					380					
Thr	Asp	Phe	Gly	Phe	Cys	Ala	Gln	Ile	Thr	Pro	Glu	Gln	Ser	Lys	Arg	
	385				390					395					400	
Ser	Thr	Met	Val	Gly	Thr	Pro	Tyr	Trp	Met	Ala	Pro	Glu	Val	Val	Thr	
				405					410					415		

Arg Lys Ala Tyr Gly Pro Lys Val Asp Ile Trp Ser Leu Gly Ile Met
420 425 430

Ala Ile Glu Met Val Glu Gly Glu Pro Pro Tyr Leu Asn Glu Asn Pro
435 440 445

Leu Arg Ala Leu Tyr Leu Ile Ala Thr Asn Gly Thr Pro Glu Leu Gln
450 455 460

Asn Pro Glu Lys Leu Ser Pro Ile Phe Arg Asp Phe Leu Asn Arg Cys
465 470 475 480

Leu Glu Met Asp Val Glu Lys Arg Gly Ser Ala Lys Glu Leu Leu Gln
485 490 495

His Pro Phe Leu Lys Leu Ala Lys Pro Leu Ser Ser Leu Thr Pro Leu
500 505 510

Ile Met Ala Ala Lys Glu Ala Met Lys Ser Asn Arg
515 520

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<211> 50
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Primer

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<210> 6
<211> 53
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Primer

<400> 6
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<210> 7
<211> 31
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Primer

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<210> 8
 <211> 29
 <212> DNA
 • <213> Artificial Sequence

 <220>
 • <223> Description of Artificial Sequence: Primer

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29

<210> 9
 <211> 3255
 <212> DNA
 <213> Homo sapiens

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<210> 10

<211> 984

<212> PRT

<213> Homo sapiens

<400> 10

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Met Ala Ser Asn Pro Glu Arg Gly Glu Ile Leu Leu Thr Glu Leu Gln
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Gly Asp Ser Arg Ser Leu Pro Phe Ser Glu Asn Val Ser Ala Val Gln
                20                      25                      30

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Lys Leu Asp Phe Ser Asp Thr Met Val Gln Gln Lys Leu Asp Asp Ile
    35                      40                      45

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Lys Asp Arg Ile Lys Arg Glu Ile Arg Lys Glu Leu Lys Ile Lys Glu
    50                      55                      60

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Gly Ala Glu Asn Leu Arg Lys Val Thr Thr Asp Lys Lys Ser Leu Ala
    65                      70                      75                      80

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Tyr Val Asp Asn Ile Leu Lys Lys Ser Asn Lys Lys Leu Glu Glu Leu
                85                      90                      95

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His His Lys Leu Gln Glu Leu Asn Ala His Ile Val Val Ser Asp Pro
    100                      105                      110

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Glu Asp Ile Thr Asp Cys Pro Arg Thr Pro Asp Thr Pro Asn Asn Asp
    115                      120                      125

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Pro Arg Cys Ser Thr Ser Asn Asn Arg Leu Lys Ala Leu Gln Lys Gln
    130                      135                      140

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Leu Asp Ile Glu Leu Lys Val Lys Gln Gly Ala Glu Asn Met Ile Gln
    145                      150                      155                      160

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Met Tyr Ser Asn Gly Ser Ser Lys Asp Arg Lys Leu His Gly Thr Ala
                165                      170                      175

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Gln	Gln	Leu	Leu	Gln	Asp	Ser	Lys	Thr	Lys	Ile	Glu	Val	Ile	Arg	Met	
		180						185					190			
• Gln	Ile	Leu	Gln	Ala	Val	Gln	Thr	Asn	Glu	Leu	Ala	Phe	Asp	Asn	Ala	
		195					200					205				
· Lys	Pro	Val	Ile	Ser	Pro	Leu	Glu	Leu	Arg	Met	Glu	Glu	Leu	Arg	His	
	210					215					220					
His	Phe	Arg	Ile	Glu	Phe	Ala	Val	Ala	Glu	Gly	Ala	Lys	Asn	Val	Met	
225					230					235					240	
Lys	Leu	Leu	Gly	Ser	Gly	Lys	Val	Thr	Asp	Arg	Lys	Ala	Leu	Ser	Glu	
			245						250					255		
Ala	Gln	Ala	Arg	Phe	Asn	Glu	Ser	Ser	Gln	Lys	Leu	Asp	Leu	Leu	Lys	
		260						265					270			
Tyr	Ser	Leu	Glu	Gln	Arg	Leu	Asn	Glu	Val	Pro	Lys	Asn	His	Pro	Lys	
	275						280					285				
Ser	Arg	Ile	Ile	Ile	Glu	Glu	Leu	Ser	Leu	Val	Ala	Ala	Ser	Pro	Thr	
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Leu	Ser	Pro	Arg	Gln	Ser	Met	Ile	Ser	Thr	Gln	Asn	Gln	Tyr	Ser	Thr	
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			325						330					335		
Gly	Cys	Gln	Asp	Ile	Leu	Glu	Asn	Val	Pro	Gly	Arg	Ser	Lys	Ala	Thr	
		340						345					350			
Ser	Val	Ala	Leu	Pro	Gly	Trp	Ser	Pro	Ser	Glu	Thr	Arg	Ser	Ser	Phe	
	355						360					365				
Met	Ser	Arg	Thr	Ser	Lys	Ser	Lys	Ser	Gly	Ser	Ser	Arg	Asn	Leu	Leu	
	370					375					380					
Lys	Thr	Asp	Asp	Leu	Ser	Asn	Asp	Val	Cys	Ala	Val	Leu	Lys	Leu	Asp	
385					390					395					400	
Asn	Thr	Val	Val	Gly	Gln	Thr	Ser	Trp	Lys	Pro	Ile	Ser	Asn	Gln	Ser	
			405						410					415		
Trp	Asp	Gln	Lys	Phe	Thr	Leu	Glu	Leu	Asp	Arg	Ser	Arg	Glu	Leu	Glu	
		420						425					430			
Ile	Ser	Val	Tyr	Trp	Arg	Asp	Trp	Arg	Ser	Leu	Cys	Ala	Val	Lys	Phe	
	435						440					445				
Leu	Arg	Leu	Glu	Asp	Phe	Leu	Asp	Asn	Gln	Arg	His	Gly	Met	Cys	Leu	
	450					455					460					
Tyr	Leu	Glu	Pro	Gln	Gly	Thr	Leu	Phe	Ala	Glu	Val	Thr	Phe	Phe	Asn	
465					470					475					480	

Pro	Val	Ile	Glu	Arg	Arg	Pro	Lys	Leu	Gln	Arg	Gln	Lys	Lys	Ile	Phe	485	490	495
Ser	Lys	Gln	Gln	Gly	Lys	Thr	Phe	Leu	Arg	Ala	Pro	Gln	Met	Asn	Ile	500	505	510
Asn	Ile	Ala	Thr	Trp	Gly	Arg	Leu	Val	Arg	Arg	Ala	Ile	Pro	Thr	Val	515	520	525
Asn	His	Ser	Gly	Thr	Phe	Ser	Pro	Gln	Ala	Pro	Val	Pro	Thr	Thr	Val	530	535	540
Pro	Val	Val	Asp	Val	Arg	Ile	Pro	Gln	Leu	Ala	Pro	Pro	Ala	Ser	Asp	545	550	555
Ser	Thr	Val	Thr	Lys	Leu	Asp	Phe	Asp	Leu	Glu	Pro	Glu	Pro	Pro	Pro	565	570	575
Ala	Pro	Pro	Arg	Ala	Ser	Ser	Leu	Gly	Glu	Ile	Asp	Glu	Ser	Ser	Glu	580	585	590
Leu	Arg	Val	Leu	Asp	Ile	Pro	Gly	Gln	Asp	Ser	Glu	Thr	Val	Phe	Asp	595	600	605
Ile	Gln	Asn	Asp	Arg	Asn	Ser	Ile	Leu	Pro	Lys	Ser	Gln	Ser	Glu	Tyr	610	615	620
Lys	Pro	Asp	Thr	Pro	Gln	Ser	Gly	Leu	Glu	Tyr	Ser	Gly	Ile	Gln	Glu	625	630	635
Leu	Glu	Asp	Arg	Arg	Ser	Gln	Gln	Arg	Phe	Gln	Phe	Asn	Leu	Gln	Asp	645	650	655
Phe	Arg	Cys	Cys	Ala	Val	Leu	Gly	Arg	Gly	His	Phe	Gly	Lys	Val	Leu	660	665	670
Leu	Ala	Glu	Tyr	Lys	Asn	Thr	Asn	Glu	Met	Phe	Ala	Ile	Lys	Ala	Leu	675	680	685
Lys	Lys	Gly	Asp	Ile	Val	Ala	Arg	Asp	Glu	Val	Asp	Ser	Leu	Met	Cys	690	695	700
Glu	Lys	Arg	Ile	Phe	Glu	Thr	Val	Asn	Ser	Val	Arg	His	Pro	Phe	Leu	705	710	715
Val	Asn	Leu	Phe	Ala	Cys	Phe	Gln	Thr	Lys	Glu	His	Val	Cys	Phe	Val	725	730	735
Met	Glu	Tyr	Ala	Ala	Gly	Gly	Asp	Leu	Met	Met	His	Ile	His	Thr	Asp	740	745	750
Val	Phe	Ser	Glu	Pro	Arg	Ala	Val	Phe	Tyr	Ala	Ala	Cys	Val	Val	Leu	755	760	765
Gly	Leu	Gln	Tyr	Leu	His	Glu	His	Lys	Ile	Val	Tyr	Arg	Asp	Leu	Lys	770	775	780

Leu Asp Asn Leu Leu Leu Asp Thr Glu Gly Phe Val Lys Ile Ala Asp
 785 790 795 800
 Phe Gly Leu Cys Lys Glu Gly Met Gly Tyr Gly Asp Arg Thr Ser Thr
 805 810 815
 Phe Cys Gly Thr Pro Glu Phe Leu Ala Pro Glu Val Leu Thr Glu Thr
 820 825 830
 Ser Tyr Thr Arg Ala Val Asp Trp Trp Gly Leu Gly Val Leu Ile Tyr
 835 840 845
 Glu Met Leu Val Gly Glu Ser Pro Phe Pro Gly Asp Asp Glu Glu Glu
 850 855 860
 Val Phe Asp Ser Ile Val Asn Asp Glu Val Arg Tyr Pro Arg Phe Leu
 865 870 875 880
 Ser Thr Glu Ala Ile Ser Ile Met Arg Arg Leu Leu Arg Arg Asn Pro
 885 890 895
 Glu Arg Arg Leu Gly Ala Ser Glu Lys Asp Ala Glu Asp Val Lys Lys
 900 905 910
 His Pro Phe Phe Arg Leu Ile Asp Trp Ser Ala Leu Met Asp Lys Lys
 915 920 925
 Val Lys Pro Pro Phe Ile Pro Thr Ile Arg Gly Arg Glu Asp Val Ser
 930 935 940
 Asn Phe Asp Asp Glu Phe Thr Ser Glu Ala Pro Ile Leu Thr Pro Pro
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 965 970 975
 Phe Asp Tyr Ile Ala Asp Trp Cys
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<210> 11
 <211> 839
 <212> DNA
 <213> Homo sapiens

<400> 11
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<210> 12
<211> 197
<212> PRT
<213> Homo sapiens

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<400> 12
Met Ser Gly Pro Arg Pro Val Val Leu Ser Gly Pro Ser Gly Ala Gly
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Lys Ser Thr Leu Leu Lys Arg Leu Leu Gln Glu His Ser Gly Ile Phe
          20          25          30

Gly Phe Ser Val Ser His Thr Thr Arg Asn Pro Arg Pro Gly Glu Glu
          35          40          45

Asn Gly Lys Asp Tyr Tyr Phe Val Thr Arg Glu Val Met Gln Arg Asp
          50          55          60

Ile Ala Ala Gly Asp Phe Ile Glu His Ala Glu Phe Ser Gly Asn Leu
          65          70          75          80

Tyr Gly Thr Ser Lys Val Ala Val Gln Ala Val Gln Ala Met Asn Arg
          85          90          95

Ile Cys Val Leu Asp Val Asp Leu Gln Gly Val Arg Asn Ile Lys Ala
          100          105          110

Thr Asp Leu Arg Pro Ile Tyr Ile Ser Val Gln Pro Pro Ser Leu His
          115          120          125

Val Leu Glu Gln Arg Leu Arg Gln Arg Asn Thr Glu Thr Glu Glu Ser
          130          135          140

Leu Val Lys Arg Leu Ala Ala Ala Gln Ala Asp Met Glu Ser Ser Lys
          145          150          155          160

Glu Pro Gly Leu Phe Asp Val Val Ile Ile Asn Asp Ser Leu Asp Gln
          165          170          175

Ala Tyr Ala Glu Leu Lys Glu Ala Leu Ser Glu Glu Ile Lys Lys Ala
          180          185          190

Gln Arg Thr Gly Ala
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Pro Gln Gly Leu Glu Ala Lys

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